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**James C. Kenney**  
Cabinet Secretary

**Jennifer J. Pruett**  
Deputy Secretary

August 23, 2019

John Moore  
Environmental Superintendent  
Western Refining, Southwest Inc., Gallup Refinery  
92 Giant Crossing Road  
Gallup, New Mexico 87301

**RE: SECOND DISAPPROVAL  
RESPONSE TO DISAPPROVAL WORK PLAN 2015 ANNUAL GROUNDWATER REPORT  
COMMENTS  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-18-012**

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has reviewed the *Response to Disapproval Work Plan 2015 Annual Groundwater Report Comments* (Response), dated June 28, 2019, submitted on behalf of Marathon Petroleum Company dba Western Refining Southwest Inc., Gallup Refinery (the Permittee). NMED hereby issues this Second Disapproval. The Permittee must address the following comments provided by NMED:

**Comment 1**

The Permittee did not include a red-line strikeout (RLSO) version of the revised Work Plan as required by the January 28, 2019 Disapproval. This is a recurring issue in recent submittals (e.g., Comment 1 in NMED's *Disapproval Facility Wide Ground Water Monitoring Work Plan – Updates for 2019*, dated July 12, 2019). Failure to provide a RLSO version slows review, creates the potential for changes to be overlooked, and the inability to identify changes to a document can be misleading. Include a RLSO version of the revised Work Plan with the revised Work Plan.

**Comment 2**

The Permittee's response to NMED's Disapproval Comment 3 states, "[c]onsidering the latest information available (i.e., data collected since preparation of the 2015 Annual Groundwater Monitoring Report for which these comments originated), we believe the groundwater gradient within the Chinle/Alluvial interface zone is accurately reflected in a regional sense as shown on Figure 10 of the 2015 Annual Groundwater Monitoring Report." Figure 2 (Chinle/Alluvial Interface Potentiometric Map North) and Figure 2A (Chinle/Alluvial Interface Potentiometric Map West) separately present groundwater flow directions in the northern and western portions of the Facility and the flow directions appear to be accurate. The depiction of the groundwater contours in two different figures at two different scales is not as helpful as a figure showing the overall area of interest. Provide a figure that presents the groundwater flow direction rather than two separate figures and include the water level data collected from the newly installed wells. If actual data is not available to draw contour lines in some areas, use dashed lines to indicate that the groundwater contours are estimated.

**Comment 3**

The Permittee's response to NMED's Disapproval Comment 3 states, "[a]s shown on Figure 10, while the groundwater flows in a generally northerly direction in the area of northeast corner of the tank farm towards OW-50 and OW-52, the gradient is expected to shift more to the northwest as you move further west near OW-56." The referenced figure (Figure 10 of the *2015 Annual Groundwater Monitoring Report*) does not depict OW-56; therefore, the accuracy of the statement cannot be verified. Provide a figure that supports the statement. The figure required by Comment 2 above, may be adequate. In addition, provide further information regarding the groundwater gradient shifting from north to northwest near OW-56; it appears that there is not enough data to demonstrate a shift in the gradient based on the information provided in the Work Plan.

**Comment 4**

The Permittee's response to NMED's Disapproval Comment 3 states, "[t]he statement on page 1-1 is revised to note the northerly gradient is limited in areal extent and that the gradient is anticipated to be more to the northwest as you move further west." Since the RLSO version was not submitted, the referenced revision on page 1-1 cannot clearly be identified (see Comment 1). Ensure that all revisions are included in the RLSO version of the revised Work Plan.

**Comment 5**

The Permittee's response to NMED's Disapproval Comment 3 states, "[w]e believe that the wells as depicted in Figure 25 of the aforementioned Investigation Report [*Investigation Report North Drainage Ditch and OW-29 & OW-30 Areas*] will help to address NMED's concern stated

above that “The MTBE plume is likely migrating toward [the] west rather than north.” These proposed wells are included in the *Investigation Work Plan North Drainage Ditch Area* (April 2019).” In the June 24, 2019 *Disapproval of the Investigation Work Plan North Drainage Ditch*, NMED directed the Permittee to change the proposed well locations. NMED still believes the location of the wells proposed in the North Drainage Ditch Work Plan are too far away from both the North Drainage Ditch and wells OW-54 and OW-55 to provide meaningful data. Propose to install wells to the west of wells OW-53, OW-54, and OW-55.

#### **Comment 6**

The Permittee’s response to NMED’s Disapproval Comment 5 states, “MPC is seeking clarification of NMED’s directive, Permittee must ensure that no contaminants migrate further downgradient of well OW-1. Just prior to this directive, NMED acknowledges that MTBE is steadily detected below the applicable standard throughout 2017. As can be seen, the reported concentrations are very low and clearly the leading edge of the plume of detectable concentrations is near OW-1. In fact, OW-1 is currently acting as a sentinel well to ensure control of the plume as defined by the groundwater cleanup levels in Section IV.D.1 of the RCRA Post-Closure Permit. Is NMED requiring the use of groundwater standards other than what is specified in Section IV.D.1 of the RCRA Post-Closure Permit?” To clarify, the Permittee is responsible for delineating the extent of groundwater contamination, if constituents are detected above detection limits even if constituent concentrations do not exceed applicable standards. The contaminant concentrations have been detected, below the applicable standards, in groundwater samples collected from well OW-1. There is no groundwater monitoring well west of well OW-1; therefore, the extent of the plume is not currently delineated. The investigation beyond the Facility boundary is required in accordance with Permit Section IV.B.1. Comment 1 in NMED’s *Disapproval Annual Groundwater Monitoring Report: Gallup Refinery – 2017*, dated March 21, 2019, requires installation of additional wells west of these boundary wells and provides detailed instructions regarding well installations.

#### **Comment 7**

The Permittee’s response to NMED’s Disapproval Comment 7 states, “[a]dditional discussion has been added to Section 4.2 to explain why it is appropriate to plug and abandon OW-13. This is basically due to the thick aquitard that is present in this area above the Sonsela aquifer, which should prevent vertical migration, and an evaluation of the fluid levels in the area suggesting a possible hydraulic connection between the Sonsela and Chinle-Alluvial Interface Zone aquifers.” The aquitard may minimize the possibility of contaminant migration between the aquifers. However, MTBE in the groundwater samples collected from well OW-13 may or may not be from faulty well construction. Fractures within the aquitard may be a factor allowing correspondence between the aquifers. Section 4.2 discusses the level of increase in the groundwater elevation among the Sonsela wells OW-12 and OW-13 and alluvial/Chinle interface well OW-14. The Permittee recommends abandonment of well OW-13 because the level of the groundwater elevation increase in well OW-13 is similar to that of alluvial/Chinle well OW-14, rather than that of Sonsela well OW-12. However, groundwater elevations in

Sonsela wells OW-12 and OW-13 are consistent with those of other Sonsela wells at the Facility according to the Sonsela groundwater elevation maps in the periodic groundwater monitoring reports. Due to the detection of MTBE in well OW-13, it is appropriate to preserve well OW-13 at this time. However, the Permittee may install a Sonsela well adjacent to well OW-13. The Permittee may propose to abandon well OW-13, if analytical results collected from the new Sonsela well confirm that the detections are caused by faulty construction of the well. In the revised Work Plan, propose to install a well adjacent to well OW-13 to evaluate the construction of well OW-13.

**Comment 8**

The Permittee's response to NMED's Disapproval Comment 7 states, "[i]n addition, a new [Sonsela] well is proposed between OW-12 and OW-13." A figure showing the location of the proposed well was not included in the Work Plan. Revise the Work Plan to include a figure that depicts the location of the proposed well.

**Comment 9**

The Permittee's response to NMED's Disapproval Comment 8 states, "Section 2 has been revised pursuant to the responses above to reference Comments 4, 5, 6, and 7." Since the RLSO version was not submitted, the referenced revision is not clearly identified (see Comment 1). Nevertheless, Section 2 (Background) was reviewed again and compared with its original text. Several issues were identified within Section 2. Address the following issues in the revised Work Plan:

- a) The first paragraph of Section 2 states, "[t]hree of the wells (OW-13 replacement, new Sonsela well between OW-12 and OW-3 and new off-site Chinle/Alluvial Interface well) will be drilled in the northeast portion of the property, with one of these actually located off-site to the northeast." The Permittee must not abandon well OW-13 yet (see Comment 7 above). The Permittee may install a Sonsela well adjacent to well OW-13 to verify the detection of MTBE in groundwater samples collected from well OW-13. In addition, Comment 7 in NMED's January 28, 2019 Disapproval requires installation of a well within the Sonsela formation between well OW-12 and OW-13, rather than OW-3. It appears there is a typographical error in the Permittee's response. The referenced Comments 4, 5, 6, and 7 in the Disapproval do not require the installation of a new off-site Chinle/Alluvial Interface well. The referenced new off-site well is required by Comment 18 Item 2 in NMED's *Disapproval Annual Groundwater Monitoring Report: Gallup Refinery – 2015*, dated January 31, 2018. Revise the Work Plan for accuracy.
- b) The third paragraph of Section 2 states, "[t]he third location is near the truck loading rack, which is considered a potential source of groundwater impacts and is also being investigated as part of Area of Concern 35. Two wells are located in this area as "shallow twin" wells to MKTF-17 and MKTF-18." The referenced proposed wells are required by Comment 40 in NMED's *Disapproval Annual Groundwater Monitoring Report: Gallup*

*Refinery – 2015*, dated January 31, 2018. The statement is not relevant to Comment 4, 5, 6, or 7 of the Disapproval, which is referenced in the Response. For clarity, reference the NMED comment numbers that provide relevant direction in the revised Work Plan.

- c) NMED's Disapproval Comment 4 (replacement of RW-2) and Comment 5 (new wells west of OW-1) are not addressed in Section 2. Section 2 must be revised to address Disapproval Comments 4 and 5.

**Comment 10**

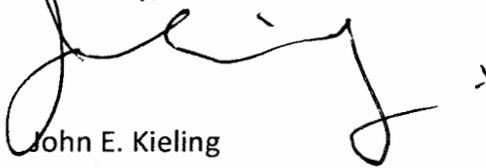
The Permittee's response to NMED's Disapproval Comment 9 states, "[t]he water levels to which NMED refers are the water levels that exist under confined conditions at MKTF-17 and MKTF-18 and are not necessarily reflective of water levels in the upper fill materials." Appendix A (Boring Logs) includes borings logs of MKTF-17 and 18. It is not clear what observation in the soil boring log constitutes "confined conditions". The Permittee suggests there are two separate water bearing zones within 20 feet bgs; however, it is likely that the two-separate water bearing zones are hydraulically connected. If the Permittee installs wells that are screened to only ten feet bgs as proposed, the wells may not produce sufficient groundwater. Propose to install replacement wells with comparable depths to the original wells with longer screens that intersect the water table in the revised Work Plan.

The Permittee must address all comments in this Disapproval and submit a revised Work Plan. Two bound hard copies and an electronic version must be submitted to NMED. In addition, include a red-line strikeout version in electronic format showing where all revisions to the Work Plan have been made. The revised Work Plan must be accompanied with a response letter that details where revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **October 31, 2019**.

Mr. Moore  
August 23, 2019  
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If you have questions regarding this Disapproval, please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling". The signature is fluid and cursive, with a large initial "J" and "K".

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: K. Van Horn, NMED HWB  
D. Cobrain, NMED HWB  
M. Suzuki, NMED HWB  
C. Chavez, OCD  
L. King, EPA Region 6 (GLCRRC)  
B. Moore, WRG

File: Reading File and WRG 2019 File  
HWB-WRG-18-012